

# Trevor Richards

# Curriculum Vitae

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## CONTACT INFORMATION

Washington & Lee University  
Mathematics Department  
Robinson Hall, Washington & Lee University  
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## EDUCATION

### University of Florida

Ph.D. Mathematics, August 2013

- Dissertation Title: On the conformal equivalence of meromorphic functions.
- Advisor: Dr. Michael Jury

M.S. in Mathematics, May 2009

B.S. in Mathematics, Dec 2006

- Minor in Philosophy
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## RESEARCH INTERESTS

Real and complex analysis – especially the topology of the level sets of continuous functions (in the real case) and meromorphic functions (in the complex case).

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## PROFESSIONAL EXPERIENCE

**Monmouth College**, Assistant Professor  
2017 to Present

**Washington and Lee University**, Visiting Assistant Professor  
2014 to 2017

**Virginia Tech University**, Instructor  
2013 to 2014

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## PUBLICATIONS

T. Richards. Characterizing meromorphic pseudo-lemniscates, *Computational Methods and Function Theory*, 1-8, April 2018, <https://doi.org/10.1007/s40315-018-0242-6>.

T. Richards and M. Younsi. Conformal models and fingerprints of pseudo-lemniscates, *Constructive Approximation*, 45(1):129-141, Feb 2017.

K. Beanland, P. Humke, and T. Richards. On Scottish Book Problem 157, *Real Analysis Exchange* 41(2):331-346, 2016.

T. Richards. Conformal equivalence of analytic functions on compact sets, *Computational Methods and Function Theory* 16(4):585-608, Dec 2016.

T. Richards. Level curve configurations and conformal equivalence of meromorphic functions, *Computational Methods and Function Theory*, 15(2):323-371, June 2015.

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SUBMITTED  
ARTICLES

T. Richards and J. Yau. Recognizing a difference quotient. Submitted

T. Richards and M. Younsi. Computing polynomial conformal models for low degree Blaschke products. Submitted

Y. Andreev and T. Richards. Luzin-type properties and the difference quotient set. Submitted

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UNDERGRADUATE  
RESEARCH  
DIRECTED

**Molly Schoon, Allie Warfield, Nathan Smolczyk**, *Analyzing games of skill as games of chance*  
Monmouth College, Summer 2017  
(Poster presented at Monmouth College August 2017 SOFIA Presentations)

**Pengrui Wang**, *Characterizing the direct products of directed semi-cycles*.  
Washington and Lee University, Summer 2016  
(Poster presented at April 2017 MAA MD-DC-VA sectional meeting)

**Jimmy Yau**, *Analytic and algebraic characterizations of the difference quotient of a real function*.  
Washington and Lee University, Fall 2015  
(Resulting article currently under review)

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TEACHING AND  
TUTORING  
EXPERIENCE

**Monmouth College**

Calculus II, Linear Algebra, Complex Analysis, SOA Actuarial Exam P Prep

**Washington and Lee University**

Calculus I, Calculus III, Linear Algebra, Discrete Mathematics II, Fundamental Concepts of Mathematics (Introduction to Proofs), Complex Analysis

**Virginia Tech University**

Calculus I, Calculus III, Differential Equations

**University of Florida**

Math for Liberal Arts Majors, Pre-Calculus, Trigonometry, Calculus I, Calculus II, Calculus III, Differential Equations

**Private Tutoring**

Calculus I, Calculus II, Calculus III, Differential Equations, Statistics, Modern Analysis, Complex Analysis

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PRESENTATIONS TO **ISMAA Trisectional Meeting**  
UNDERGRADUATES

*Graphs and the infinite train.* (March 2018)

**Washington and Lee University Math, Munch, and Mingle (Undergraduate Seminar)**

*Polynomials: Your real intuitions in a complex world.* (February 2016)

**Washington and Lee University Math, Munch, and Mingle (Undergraduate Seminar)**

*An information theoretic proof of the infinitude of the prime numbers.* (October 2015)

**Washington and Lee University Analysis Seminar**

*On complex polynomials having prescribed critical values.* (October 2014)

**MAA Maryland–District of Columbia–Virginia Section Meeting**

*On the level curves of finite Blaschke products and polynomials.* (April 2014)

**Pi Mu Epsilon, University of Florida**

*Level curves of complex polynomials (rational functions can come too).* (February 2011)

*Finding the number of distinct zeros of a complex polynomial.* (October 2009)

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CONFERENCE AND  
SEMINAR  
PRESENTATIONS

**Summer Symposium in Real Analysis XLII**

Herzen University, St. Petersburg, Russia

*Luzin-type Properties and the Difference Quotient.* (upcoming in June 2018)

**Canadian Mathematics Society Winter Meeting**

Niagra Falls, Canada

*On the conformal modeling problem.* (December 2016)

**South Eastern Analysis Meeting (SEAM)**

University of South Florida

*Conformal modeling by polynomials.* (March 2016)

**South Eastern Analysis Meeting (SEAM)**

University of Georgia

*Level curves and conformal equivalence of analytic and meromorphic functions.* (March 2015)

**University of Virginia Analysis Seminar**

University of Virginia

*The conformal equivalence of polynomials and finite Blaschke products: A tale of three proofs.* (November 2014)

CONFERENCE AND  
SEMINAR  
PRESENTATIONS  
(CONTINUED)

**South Eastern Analysis Meeting (SEAM)**

Clemson University

*Level curves and conformal equivalence of analytic and meromorphic functions.*  
(March 2014)

**Dynamics and Complex Analysis Seminar**

Virginia Tech University

*On the level curves of meromorphic functions.* and others (August 2013)

**Analysis Seminar**

University of Florida

*On meromorphic functions which share a level curve.* and many others (Fall 2009–  
Fall 2012)

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INSTITUTIONAL AND  
OTHER SERVICE

Spring 2018

Served as faculty advisor for Monmouth College's  
*Midwest Journal of Undergraduate Research (MJUR)*

Fall 2017 &  
Spring 2018

Served as referee for *MJUR*

Fall 2017 &  
Spring 2018

Assisted in administering department capstone course

Fall 2017

Organized college lecture by visiting mathematician Paul Humke

Summer 2017

Directed Monmouth College SOfIA project

Fall 2016

Referee for *Computational Methods and Function Theory*

Fall 2016

Administered WLU Problem of the Month

Summer 2016

Directed research project for Pengrui Wang

Fall 2015

Directed research project for Jimmy Yau

Fall 2014 to  
Present

Served as reviewer for *AMS Mathematical Reviews*

Fall 2014

Co-taught the Putnam exam prep course for Washington and Lee Univ.  
Putnam exam team

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SCOLARSHIPS AND  
AWARDS

2006–2012

Teaching Assistant Scholarship  
Department of Mathematics, University of Florida, full tuition wa-  
ver and stipend

2010 & 2012

Student Travel Awards  
South Eastern Analysis Meeting

2008

Student Travel Award  
Association of Symbolic Logic, New York

2002–2004

National Merit Scholar

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GRADUATE  
COURSEWORK

- Real Analysis
  - Complex Analysis
  - Logic
  - Set Theory
  - Algebra
  - Topology
  - Probability & Potential Theory
  - Functional Analysis
  - Ergodic Theory & Dynamical Systems
  - Differential Geometry
  - Graph Theory
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RELEVANT  
SOFTWARE SKILLS

Mathematica  
Matlab  
Latex  
Moodle, Sakai, Blackboard (Online gradebooks and student interfaces.)

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